

Oral Abstract – O132

Currently available medications may not be sufficient for lifelong treatment of HIV

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Purpose of the study

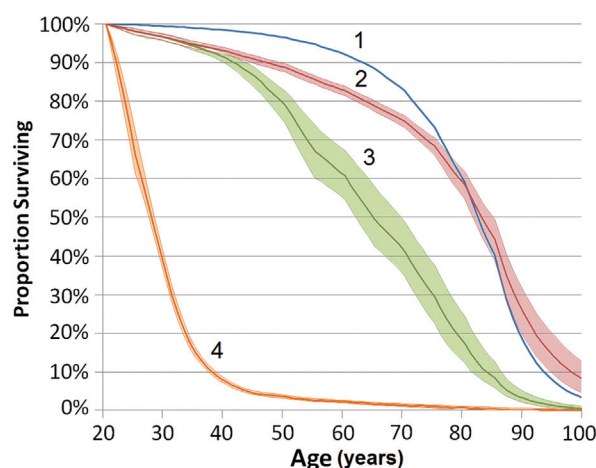
Combination antiretroviral therapy (cART) has greatly improved the life expectancy of people living with HIV (PLHIV). A series of cohort studies have predicted near-to-normal life expectancies for PLHIV receiving cART but have not considered the impact of multi-class resistance on long-term survival. Our study aims to project the future life expectancy of PLHIV in a resource-rich setting in the context of the currently available antiretroviral treatments.

Methods

Patient antiretroviral treatment data, including time on each regimen until treatment failure, were sourced from an observational cohort of 3434 predominantly male (94.2%) PLHIV in Australia over the period 1997 to 2010. These data were analyzed in an individual-based mathematical model to calculate the time until exhaustion of all treatment options and the expected impact on HIV-associated mortality. Standardized mortality ratios were used to simulate expected survival before and after treatment exhaustion.

Summary of results

The model estimated that the median time until exhaustion of currently available treatment options is 43.4 years (interquartile range = 31.4 to 58.6 years). However, the model predicts that 10% of PLHIV will use up all currently available cART options after just 22.6 years. The figure shows the survival proportions of males from age 20 years in four mortality scenarios: (1) the general population mortality rate; (2) the mortality rate in PLHIV as currently measured (without considering exhaustion of currently available treatments); (3) mortality rate in PLHIV considering additional mortality due to limited cART options; and (4) mortality rate if no cART is available. PLHIV who start currently available cART regimens at age 20 years are expected to live to a median of 64.7 (95% uncertainty bound (UB) = 61.8 to 69.3) years of age, when adjusting for treatment option exhaustion. This is a substantial improvement on no cART (median survival to 27.6 [95% UB = 27.2 to 28.1] years of age) but is lower than the expected life expectancy (82.2 years of age) of an HIV-negative male in the general population. The gap between life expectancy among PLHIV and the general population is greater for those infected at younger ages.



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Conclusions

As treatment options are exhausted in the coming years, a substantial difference in life expectancy between PLHIV and the general population is expected, particularly for people who acquire HIV at a younger age or who are currently highly treatment-experienced.